IN THE CLAIMS:

Please amend the claims as follows.

1. (Canceled)

2. (Currently Amended) The method of claim ~~1~~ 45, wherein the at least one parameters ~~further~~ comprises at least one selected from the group consisting of a performance parameters, an environment parameters, and a simulation parameters.

3. (Currently Amended) The method of claim 2, wherein the performance parameter[[s]] comprise drilling parameters.

4. (Currently Amended) The method of claim 2, wherein the environment parameter[[s]] comprises cutting element interaction data and bottom hole geometry data.

5. (Currently Amended) The method of claim ~~1~~ 45, wherein the ~~executing the simulation~~ determining the radial forces comprises:

rotating the selected drill bit;

calculating a new location of a cutting element on the selected drill bit;

determining ~~the~~ an interference between the cutting element and ~~the~~ an earth formation[[s]] at the new location; and

calculating a radial force acting on the earth formations based on the interference at the new location.

6. (Currently Amended) The method of claim ~~1~~ 45, wherein the selected drill bit is a roller cone drill bit.

7. (Currently Amended) The method of claim 6, wherein ~~the~~ bit design parameters of the selected drill bit comprise[[s]] at least one ~~of a~~ selected from the group consisting of a cone profile, a cone axis offset, a number of cutting elements on each cone, a location of a cutting element of the selected drill bit, a size of a cutting element of the selected drill bit, a shape of a cutting element of the selected drill bit, and an orientation of a cutting element of the selected drill bit.

8. (Currently Amended) The method of claim ~~1~~ 45, wherein the selected drill bit is a fixed cutter drill bit.

9. (Currently Amended) The method of claim 8, wherein ~~the~~ bit design parameters of the selected drill bit comprise[[s]] at least one ~~of a~~ selected from the group consisting of a cutter location, a cutter orientation, a cutter size, a cutter shape, and a cutter bevel

size, a bit profile, a bit diameter, a number of blades on the selected drill bit, a blade geometry, a blade location, a junk slot area, and a bit axial offset.

10. (Currently Amended) The method of claim ~~1~~ 45, wherein the ~~applying the criterion to~~ evaluating the radial forces comprises:

summing [[a]] magnitudes of the radial forces with respect to ~~the~~ a direction to generate a sum of the radial forces;

comparing the sum of the radial forces to an applied weight-on-bit; and

generating a ratio between the sum of the radial forces and the applied weight-on-bit.

11. (Original) The method of claim 10, wherein the ratio of the sum of the radial forces to the applied weight-on-bit is no more than about 0.20.

12. (Original) The method of claim 10, wherein the ratio of the sum of the radial forces to the applied weight-on-bit is no more than about 0.10.

13. (Original) The method of claim 10, wherein the ratio of the sum of the radial forces to the applied weight-on-bit is no more than about 0.05.

14. (Currently Amended) The method of claim ~~1~~ 45, wherein the ~~applying the criterion~~ evaluating the radial forces comprises:

plotting [[a]] magnitudes of the radial forces with respect to at least one selected from [[a]] the group consisting of a direction of force, a frequency of occurrence, and time, to generate a radial force plot.

15. (Currently Amended) The method of claim 14, wherein the radial force plot comprises a polar plot of the magnitudes and directions of the resultant radial forces.

16. (Currently Amended) The method of claim 15, wherein the polar plot indicates that the resultant radial forces ~~is~~ are less than a predetermined value for a selected percentage of the time during the simulated drilling.

17. (Currently Amended) The method of claim 16, wherein the selected percentage of the time during the simulated drilling is 70%.

18. (Currently Amended) The method of claim 14, wherein the radial force plot comprises a chart plot of the resultant radial force.

19. (Currently Amended) The method of claim 18, wherein the ~~polar~~ chart plot indicates that the radial resultant forces ~~is~~ are less than a predetermined value for a selected percentage of the time during the simulated drilling.

20. (Currently Amended) The method of claim 19, wherein the selected percentage of the time during the simulated drilling is 70%.

21. (Currently Amended) The method of claim 14, wherein the radial force plot comprises a box-whisker plot of the resultant radial forces.

22. (Currently Amended) The method of claim 21, wherein the ~~polar~~ box-whisker plot indicates that the resultant radial forces ~~is~~ are less than a predetermined value for a selected percentage of the time during simulated drilling.

23. (Currently Amended) The method of claim 22, wherein the selected percentage of the time during the simulated drilling is 70%.

24. (Canceled)

25. (Currently Amended) The method of claim ~~24~~ 46, wherein the ~~applying the criterion to~~ evaluating the radial forces comprises:

summing a magnitude of the radial forces with respect to the direction to generate a sum of radial forces;

comparing the sum of radial forces to an applied weight-on-bit; and

generating a ratio between the sum of the radial forces and the applied weight-on-bit.

26. (Currently Amended) The method of claim ~~24~~ 46, wherein the ~~applying the criteria~~ evaluating the radial forces comprises:

plotting a magnitude of the radial forces with respect to at least one selected from a group of direction of force, frequency of occurrence, time, to generate a radial force plot.

27. (Currently Amended) The method of claim 26, wherein the radial force plot comprises a polar plot of the magnitudes and directions of the resultant radial forces.

28. (Currently Amended) The method of claim 27, wherein the polar plot indicates that the resultant radial forces ~~is~~ are less than a predetermined value for a selected percentage of the time during the simulated drilling.

29. (Currently Amended) The method of claim 28, wherein the selected percentage of the time during the simulated drilling is 70%.

30. (Currently Amended) The method of claim 26, wherein the radial force plot comprises a chart plot of the resultant radial force.

31. (Currently Amended) The method of claim 30, wherein the ~~polar~~ chart plot indicates that the radial resultant forces ~~is~~ are less than a predetermined value for a selected percentage of the time during the simulated drilling.

32. (Currently Amended) The method of claim 31, wherein the selected percentage of the time during the simulated drilling is 70%.

33. (Currently Amended) The method of claim 26, wherein the radial force plot comprises a box-whisker plot of the resultant radial forces.

34. (Currently Amended) The method of claim 33, wherein the ~~polar~~ box-whisker plot indicates that the resultant radial forces ~~is~~ are less than a predetermined value for a selected percentage of the time during simulated drilling.

35. (Currently Amended) The method of claim 34, wherein the selected percentage of the time during the simulated drilling is 70%.

36. (Currently Amended) The method of claim ~~24~~ 46, further comprising adjusting bit design parameters.

37. (Currently Amended) The method of claim 36, wherein the ~~drilling tool~~ bottomhole assembly comprises a roller cone drill bit; and wherein the bit design parameters comprise at least one of a group consisting of a cone profile, a cone axis offset, a number of cutting elements on each cone, a location of a cutting element of the drill bit, a size of a cutting element of the drill bit, a shape of a cutting element of the drill bit, and an orientation of a cutting element of the drill bit.

38. (Currently Amended) The method of claim 36, wherein the ~~drilling tool~~ bottomhole assembly comprises a fixed cutter drill bit; and wherein the bit design parameters comprise at least one of a group consisting of a cutter location, a cutter

orientation, a cutter size, a cutter shape, and a cutter bevel size, a bit profile, a bit diameter, a number of blades on the bit, a blade geometry, a blade location, a junk slot area, and a bit axial offset.

39. (Canceled)

40. (Currently Amended) The method of claim ~~39~~ 46, wherein the graphically displaying occurs in real time.

41. (Canceled)

42. (Currently Amended) A drill bit designed using the method of claim ~~1~~ 45.

43. (Currently Amended) A bottomhole assembly designed using the method of claim ~~24~~ 46.

44. (Canceled)

45. (New) A method for designing a drill bit, comprising:

determining radial forces acting on a selected drill bit during simulated drilling;

evaluating the radial forces based on at least one selected criterion; and

adjusting at least one parameter of the selected drill bit based on the ~~evaluation~~ evaluating.

46. (New) A method for designing a bottomhole assembly, comprising:

determining radial forces acting on a bottom hole assembly during simulated drilling, said bottomhole assembly including a drill bit;

evaluating the radial forces based on at least one selected criterion; and

adjusting at least one parameter of the bottom hole assembly based on the evaluation.

47. (New) A method for designing a bit, comprising:

determining radial forces acting on a selected drill bit during a simulated drilling in selected earth formation;

graphically displaying the radial forces determined during the simulation; and

adjusting at least one parameter of the drill bit based on the graphical display of the radial forces.

48. (New) A method for selecting a bit design, comprising:

simulating a first bit design drilling in earth formation;

obtaining a first set of radial forces determined from the simulating of the first bit design;

simulating second bit design drilling in earth formation;

obtaining a second set of radial forces determined from the simulating of the second bit design;

evaluating the first set of radial forces and the second set of radial forces based on a selected criterion; and

selecting a preferred bit design based on the evaluating